

Researchers identify new genes associated with cognitive ability

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Investigators at The Feinstein Institute for Medical Research discovered dozens of new genetic variations associated with a person's general cognitive ability. The findings, which were published online today in *Cell Reports*, have the potential to help researchers develop more targeted treatment for cognitive and memory disorders.

"For the first time, we were able to use genetic information to point us

towards specific drugs that might aid in [cognitive disorders](#) of the brain, including Alzheimer's disease, schizophrenia and attention deficit hyperactivity disorder," said Todd Lencz, PhD, senior author of the study and professor at the Feinstein Institute and the Donald and Barbara Zucker School of Medicine at Hofstra/Northwell.

In the largest peer-reviewed study of its kind, an international team of 65 scientists, led by Dr. Lencz, studied the genomes of more than 100,000 individuals who had their brain function measured by neuropsychological tests. These data were then combined with genomes from 300,000 people measured for the highest level of education achieved, which serves as an estimate for cognitive ability, or how the brain acquires knowledge.

While profiling cognitive ability, researchers also discovered a genetic overlap with longevity. They found when examining an individual's family that a genetic predisposition towards higher cognitive ability was associated with longer lifespan. A new genetic overlap between cognitive ability and risk for autoimmune disease was also identified.

This study appears less than a year after Dr. Lencz and his colleagues published a similar, smaller study that was only able to identify a few key genes associated with cognitive ability.

"The field of genomics is growing by leaps and bounds," Dr. Lencz said. "Because the number of genes we can discover is a direct function of the sample size available, further research with additional samples is likely to provide even more insight into how our genes play a role in cognitive ability."

Provided by Northwell Health's Feinstein Institute for Medical Research

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